

Pyrgus communis (Grote)
Pholisora catullus (Fabricius)
Erynnis ? *brizo* (Boisduval and LeConte)
Erynnis juvenalis (Fabricius)
Atrytone logan (W. H. Edwards)
Lerema accius (Smith)

THE AVOCADO MITE OF CALIFORNIA, A NEW SPECIES.

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A species of spinning mite has been known to attack avocados in southern California for over a decade. A related species has attacked avocados and other trees in Florida for over thirty years. Since these two mites of avocado resemble one another superficially, entomologists and others have been identifying the California species as *Paratetranychus yothersi*, the name assigned to the Florida mite by the writer in 1914.¹

At the time when *Paratetranychus yothersi* was described, the male genital structure had not been studied and was unknown. Rather recently male specimens were obtained from Florida and studied critically, together with males of the California form. This examination of the male characters revealed (see Figures 1, 2, and 3) that the California avocado mite is a distinct and undescribed species, and its description follows.

Paratetranychus coiti, new species.

Female.—Body outline widely ovate, about a third longer than wide. Dorsal armature consisting of 26 strong, pale bristles, distributed about as usual; not arising from tubercles. Greater portion of cephalothorax pale, rusty pink to pink; a pattern of darker spots and blotches occupies much of the lateral area and at times the median area of the abdomen, these blotches purplish brown to blackish brown; forelegs and palpi rusty pink, the other legs pale. Two carmine eye corneas on each side, just laterad of the subfrontal bristles. A series of measured females averaged 0.397 mm. long (tip of mandibular plate to hind body margin). Mandibular plate tapering gradually forward, and distinctly emarginate anteriorly. Dorsal suture separating cephalothorax and abdomen rather indistinct. "Thumb" of palpus much shortened axially, almost twice as thick as long, bearing at its tip a nonclavate "finger" which is about as thick as long; the dorsal sensilla is unusually slender and is situated unusually near the base of the "thumb"; the customary pair of tacklike digituli arise just dorsad of the terminal "finger"; a weak hair arises near the base of the dorsal sensilla, and a similar seta arises dorsally from the "thumb" at its base; a hair arises near the ventro-distal angle of the "thumb." Legs relatively short; foreleg longest, barely two-thirds length of body proper, four-fifths width of body;

¹ McGregor, E. A. "Four New Tetranychids." *Ann. Ent. Soc. Amer.*, Vol. VII, No. 4, 1914.

well supplied with strong hairs. Relative lengths of the joints of foreleg as follows: Coxa, 18; trochanter, 16; femur, 28; patella, 18; tibia, 17; tarsus, 20. Tarsus I dorsally with 7 strong hairs and 2 weak hairs; tarsus II dorsally with 6 strong hairs and 1 weak hair; tarsi III and IV with only 4 hairs dorsally. Tip of tarsus (φ) bearing a simple claw, which is thick at base, straightish to about midpoint, where it bends downward about 90° ; at a point about one-third the length of the claw from its base arise eight gently curving ventral spurs (in pairs) whose tips conspicuously exceed that of the main claw, the proximal pair being stronger; the usual four tenent hairs arise at the base of the main claw. Collar trachea for the most part a straightish tube, ending in a somewhat enlarged elliptical chamber. Egg oblate to lenticular, bearing dorsally a slender axial stalk which somewhat exceeds the axial diameter of the egg.

Male.—Much smaller than female; a measured series averaged 0.297 mm. (tip of mandibular plate to hind body margin). Body narrow, pointed behind. Color paler than that of female. Palpus bearing a spur dorsally on second joint. Tarsus of leg I of male with the main claw somewhat stouter and a little less abruptly bent than in female; at a point about one-fourth the length of the claw from its base arise three weak, straightish spurs which are surpassed by the main claw. Penis with inner lobe rodlike; a very weak basilar lobe dorsally, and a slightly stronger lobe ventrally at outer end of inner lobe. Shaft at point of origin a little thicker than inner lobe; middle portion bent upward about 60° from main axis of penis and very little narrowed; distal extremity bent backward and very abruptly narrowed; the thin tip barely truncated.

Type slide.—Cat. No. 1379, U. S. National Museum.

The type material is from Chula Vista, Calif., February 1, 1940, from avocado leaves, collected by Dean F. Palmer, deputy agricultural commissioner for San Diego County.

A mite was described by Ewing from avocado from Yarrow Experiment Station, Rockville, Md., as *Oligonychus major*, but is distinct from the California avocado mite. In the male genital characters the California species is perhaps closest to *Paratetranychus ununguis* Jac. and *P. ilicis* McG. The California avocado mite may be distinguished from the above three species as follows:

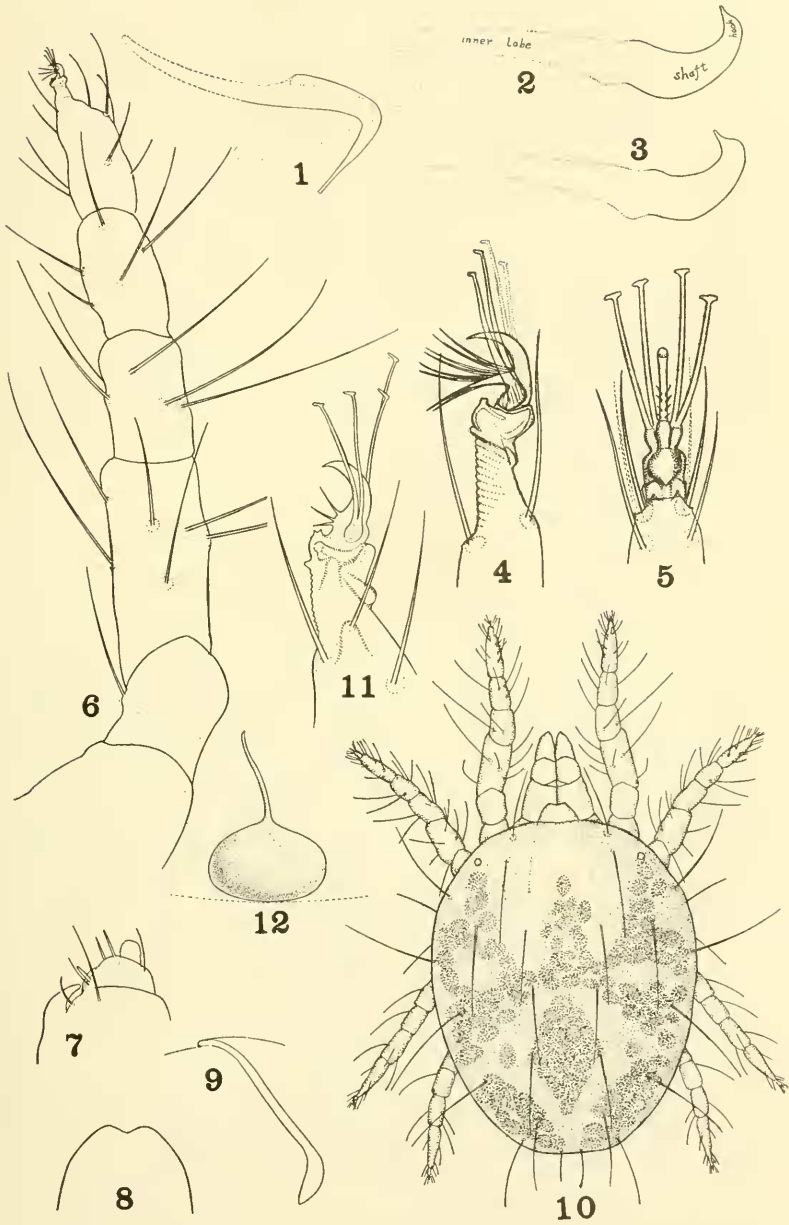
O. Major.

"Thumb" of palpus not surpassing the palpal claw; tarsal claw (φ) with 3 to 5 ventral spurs, these two-thirds as long as main claw; mandibular plate not emarginate.

P. ununguis.

Terminal "finger" of palpus almost twice as long as thick; tarsal claw (φ) with 10 to 12 ventral spurs, these barely equalling the main claw; mandibular plate not emarginate; inner end of collar trachea terminating in a globular chamber; hook of penis narrow-attenuate (Hirst)² recurved hardly 90° , about equalling shaft; egg globular.

² Widely truncate according to Zacher.



P. ilicis.

"Thumb" of palpus almost as long as thick, exceeding the palpal claw; terminal "finger" noticeably clavate; tarsal claw with 6 ventral spurs, these about equalling the main claw; mandibular plate emarginate anteriorly; dorsal bristles arising from prominent tubercles; collar trachea terminating inwardly in a rectangular chamber; tarsus of leg I (♀) fully one-half again as long as tibia; penis with hook gradually acuminate to a sharp tip.

P. coiti.

"Thumb" of palpus almost twice as thick as long but much exceeding the palpal claw; terminal "finger" about as thick as long; tarsal claw (♀) with 8 ventral spurs, conspicuously exceeding the main claw; mandibular plate distinctly emarginate anteriorly; dorsal bristles not arising from prominent tubercles; hook of penis less than one-half length of shaft, extremely abruptly narrowed to the barely truncate tip, which is deflected slightly more than 90° from the axis of the penis; tarsus of leg I unusually short, barely longer than tibia; inner end of collar trachea terminating in an enlarged elliptical chamber.

This mite was first brought to the writer's attention in 1929, by J. Elliot Coit and P. E. Oliver, both then engaged in agricultural consulting service. Dr. Coit stated that the avocado mite "started around Carlsbad and spread rapidly from there . . . Several hundred acres were showing defoliation." In the last few years the writer has received this mite from seven localities in San Diego County, one locality in Orange County, and one locality in Los Angeles County, the collectors having been J. E. Coit, P. E. Oliver, H. M. Armitage, H. J. Quayle, Dean Palmer, and J. R. Lafollette. It has been commonly reported that the avocado mite is readily controlled by applications of sulfur dust.

At a constant temperature of 77° F., under laboratory conditions, the avocado mite requires 7 days to complete a full generation (egg to egg). At a constant temperature of 91.4° F., individuals of the avocado mite were not able to develop, and mites in all stages, including eggs, died.

EXPLANATION OF PLATE 9.

Paratetranychus coiti, new species, and *P. yothersi* McG.

- Fig. 1. Penis of *P. yothersi* McG.
 (Remaining figures are all of *P. coiti*, n. sp.)
 Fig. 2 and 3. Penis (lateral view).
 Fig. 4. Tarsal appendages of female (lateral view).
 Fig. 5. Tarsal appendages of female (ventral view).
 Fig. 6. Foreleg of female.
 Fig. 7. Tip of palpus of female and its appendages (lateral view).
 Fig. 8. Anterior half of mandibular plate.
 Fig. 9. Collar trachea.
 Fig. 10. Adult female (dorsal view).
 Fig. 11. Tarsal appendages of foreleg of male (lateral view).
 Fig. 12. Egg (lateral view).
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